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OVIPOSITING OF VANESSA ANTIOPA.

ARCHIBALD C. WEEKS.

At Richmond Valley, Staten Island, on April 15th, of this year, I was fortunate enough to discover an *Antiopa* in the act of ovipositing. As the process is one rarely seen its record may be interesting. The locality was warm, sunny and completely sheltered from the wind. In passing through a thicket of pussy willows (*Salix candida* (?)), I almost ran against the butterfly resting motionless, head downward, close to the extremity of a slender willow stem, the catkins of which were not yet in bloom. The wings were extended at right angles with the body, the under side facing the sun, but the primaries were pushed backward so as to cover the secondaries, and in this position the insect perched at the end of the stalk afforded an almost exact counterpart of a blackened and withered bowl-shaped calyx with an irregular and faded out upper edge. Aside from the short catkins, every stem, branch and twig in the vicinity was entirely denuded, the only objects suggestive of leaf or flower being some dried and withered seed pods of the swamp *Asclepias* which still clung to the extremities of the dead stalks. The butterfly, as if realizing how conspicuous its situation was, remained as motionless and fixed as possible, without the flutter of a wing, as if forming an integral part of the stalk, only the closest observation availing to detect the movement of the abdomen and the scarcely perceptible advance down the stem—a fine example of protective mimicry. The first eggs were deposited only an inch from the end of the stalk, close to the stem, and encircling it just as far as the insect could reach without altering its position. When discovered the eggs had been half deposited, but the insect continued its work entirely oblivious of my proximity and without the slightest change of attitude. The eggs were not laid in regular rows, but in an arrangement somewhat resembling the alternate squares upon a checkerboard having the corners in contact but the sides free. The egg cluster extended irregularly along the stem some two inches, was of a pale yellow color, and contained as nearly as could be computed about four hundred and fifty eggs, probably the entire contents of the ovary; the lowest, of course, being deposited last. The egg under a lens suggested a musk melon with the surface divided into eight longitudinal sections by as many cream-colored

ribs, each terminating at a small circle at the apex, in the center of which the germ could be distinctly seen. The instinct of the butterfly in selecting the dwarf willows, which develop earliest, as a depository for its eggs in spring, while preferring the tree willows for the August brood is a matter of common experience. Last summer a large brood of the larvæ of this insect fed on the hop vines in the rear of my Brooklyn residence. A comparison of the number of eggs laid in the present instance with the ordinary number of larvæ generally constituting a brood after the second or third adult (50-100) may be used as an indication of the great percentage which never attain maturity. The stalk with its egg cluster were preserved in order to note further developments.

NEW NORTH AMERICAN TIPULIDÆ.

BY R. W. DOANE.

Dicranomyia ochracea, sp. nov. (Pl. VII, fig. 1.)

Ochraceous; front brownish; rostrum light yellow; palpi yellow, infuscated toward tip; antennæ light brown; joints of flagellum with a short sparse pubescence; verticels of moderate length; thorax pale ochraceous, dorsum with a broad brown stripe which is divided back of the suture; scutellum and metanotum with a brownish tinge; halteres pale; knobs brownish, abdomen brownish above, lighter underneath; forceps of male lighter brown; legs tawny, tarsi infuscated at tip; wings hyaline, stigma with a faint brownish tinge; tip of auxiliary vein opposite the origin of the præfurca; distance of the subcostal cross vein from the tip of the auxiliary vein about equal to the length of the præfurca; no marginal cross vein apparent; discal cell open, coalescing with the second posterior cell; veins brownish with a short pubescence in the apical portion of the wings. Length, male 4.5 mm.; wing 6 mm.

Habitat: Moscow Mountain, Idaho, ♂ one male. (Doane.) Type no. 103. Wash. Agric. Coll. & S. of S.

Dicranomyia cinerea, sp. nov. (Pl. VII, fig. 2.)

Cinereous; head cinereous; front with a rather broad brown longitudinal stripe; rostrum reddish brown; palpi brown; antennæ yellowish, somewhat infuscated; thorax cinereous, dorsum with three brown stripes, the median one divided by a narrow cinereous line; pleuræ with two distinct narrow brown lines, the space between the lines being almost white; metanotum slightly infuscated in the middle; halteres pale, knobs somewhat infuscated; abdomen brownish, lateral margins somewhat darker; ovipositor yellow; legs light tawny; tip of femora with a rather broad brown band; the base and tip of tibia likewise with a brown band which is some-